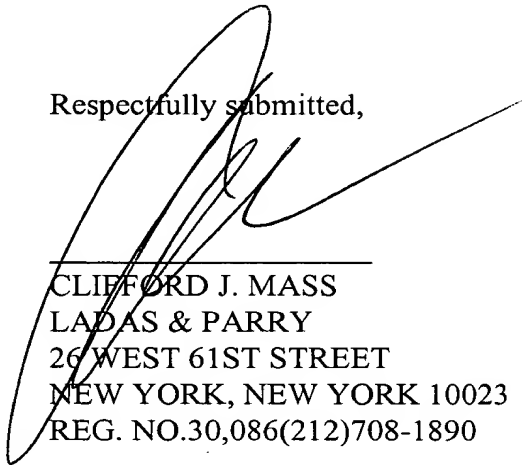


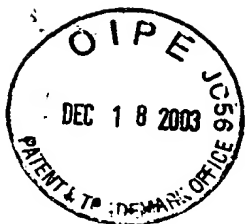
REMARKS

It is respectfully submitted that the above amendatory action overcomes the
draftsperson's objections to the drawings.

Respectfully submitted,



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08/779,460
Annotated Sheet Showing Changes

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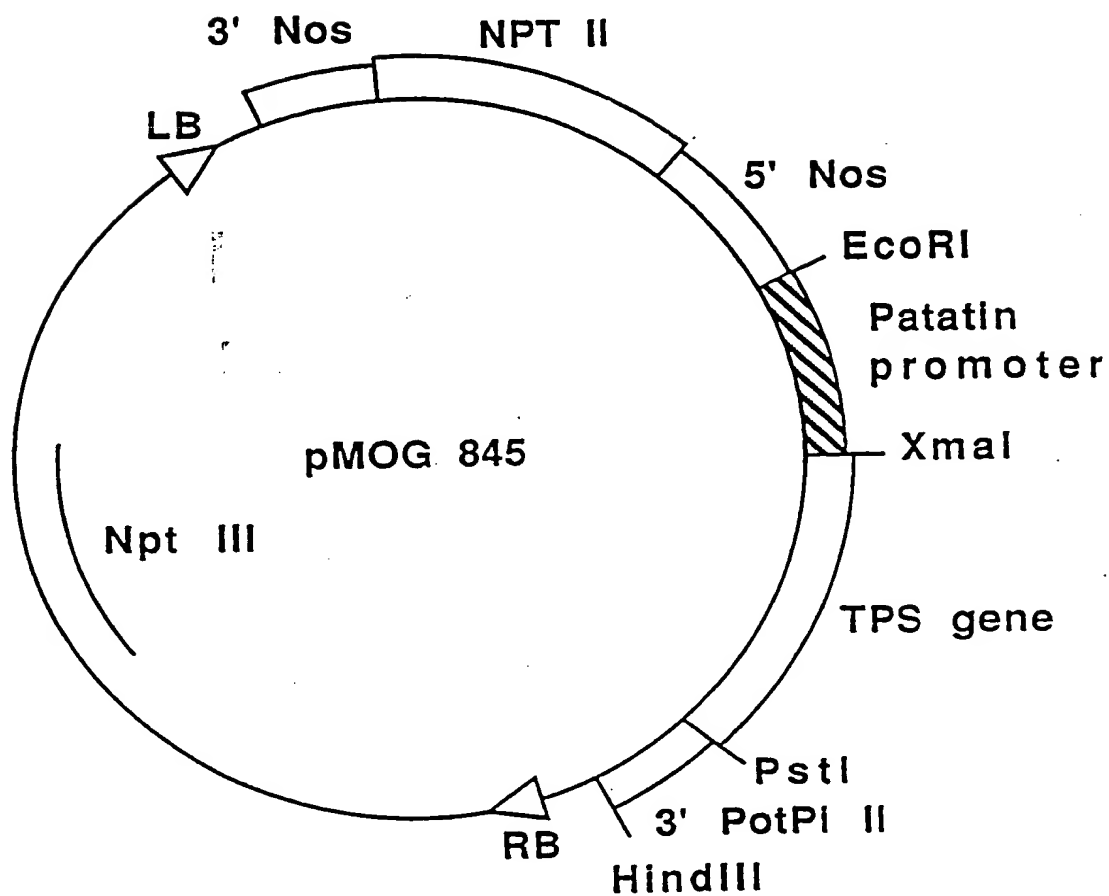


FIG. 1

~~Fig. 1~~



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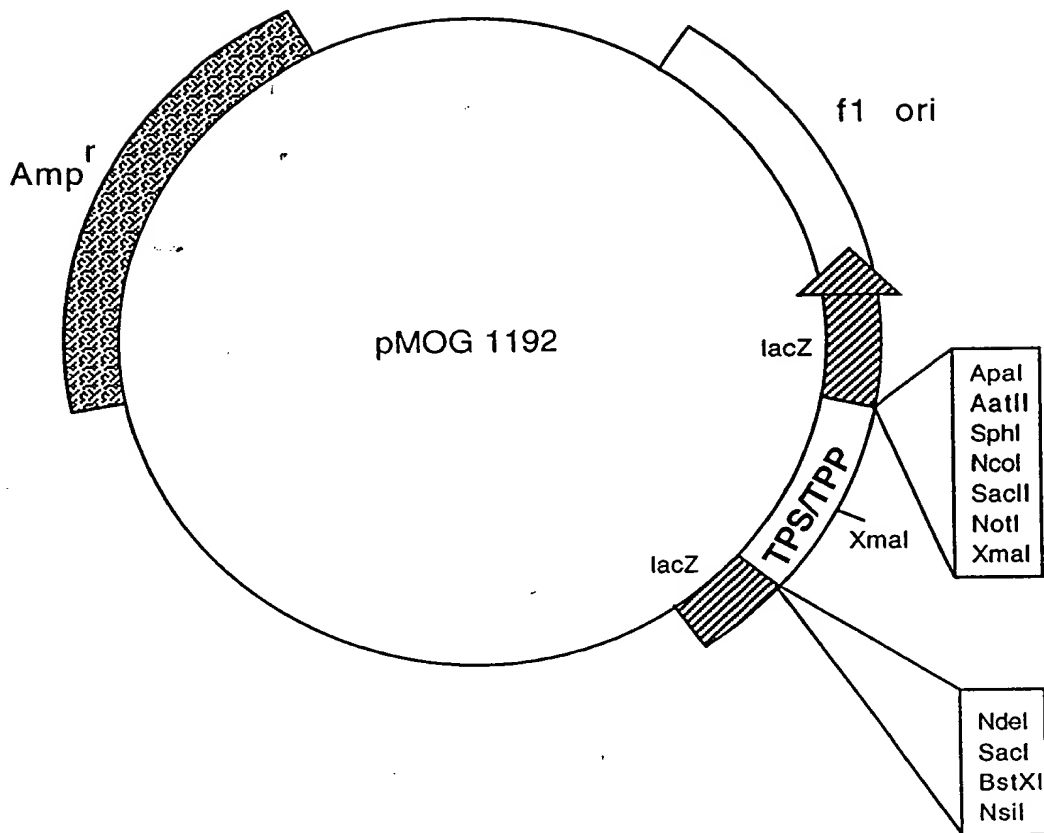


FIG. 2

~~Fig. 2~~

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AA	238	I	P	Y	A	V	P	G	G	R	F	N	E	L	Y	G	W	D	S	Y	M	N	A	L	G	L	L	E	A	N	K	T	D	V	A	R	G	M	V	
			P	F	I	V	P	G	G	R	F	V	E	F	Y	Y	W	D	S	Y	W	V	M	E	G	L	L	S	E	M	A	E	T	V	K	G	M	L		
			P	Y	V	V	P	G	G	R	F	R	E	V	Y	Y	W	D	S	Y	F	T	M	L	G	L	A	E	S	G	H	W	D	K	V	A	D	M	V	
			G	F	I	V	P	G	G	R	F	K	E	I	Y	Y	W	D	A	Y	W	I	I	E	G	L	L	I	T	D	M	T	E	T	A	K	G	M	I	
			Tase25----->																																					
			Tase24 ----->																																					
AA			E	H	F	I	F	E	I	N	H	Y	G	K	I	L	N	A	N	R	S	Y	Y	L	C	R	S	Q	P	P	F	L	T	E	M					
			Q	N	F	L	D	L	V	T	A	Y	G	H	I	P	N	G	G	R	V	Y	Y	L	Q	R	S	Q	P	P	P	L	L	T	L	M				
			A	N	F	A	H	E	I	D	T	Y	G	H	I	P	N	G	N	R	S	Y	Y	L	S	R	S	Q	P	P	P	F	F	A	L	M				
			E	N	L	I	E	L	L	Y	K	F	G	H	I	P	N	G	S	R	W	Y	Y	Q	E	R	S	Q	P	P	P	L	L	A	A	M				
			Tase26<-----																																					
AA			664																																					
			I																																					
			A	A	T	E	G	F	G	W	V	T	N	A	R	Y	I	L	G	L	K	Y	M	N																
			E	V	Q	E	G	F	G	W	T	N	G					V	A	L	M	L	L	D																
			P	L	Q	D	G	F	G	W	T	N	G					V	T	L	K	M	L	D																
			V	V	Q	S	G	F	G	W	T	N	G					V	V	L	E	F	I	N																
			Tase27<-----																																					

FIG. 3

~~Fig. 3~~



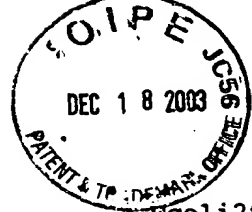
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Comparison of trehalase sequences derived from different species.

	1				50
Ecoli2treha	MLNQKIQN	PNPDELMIEV	DLCYELDPYE	
Ecolitreha	.....	..MKSPAPS	RPQKMALIPA	CIFLCFAALS	
Bommotreha	.....	.....	.....MRLF	LLLVLGTTV.	
Tenmotreha	.....	.....	.....MIPF	LLMVAFADTV	
Rabbitreha	.....	.....	MPGSTWELHL	LLLLLGLG...	
Potatotreha	.....	.....	..MGKAIIFM	IFTMSNMNIK	
Yeasttreha	MSVFDNVSPF	KKTGFGLQO	TRRGSEDDTY	SSSQGNRRFF	IEDVDKTLNE
	51				100
Ecoli2treha	LKLDemieae	PEPEMIEGLP	ASDALTPADR	YL.....	ELFEH
Ecolitreha	VQAEETPVTP	QPPDILLG..	.....	.....	PLFND
Bommotreha	..IADDLPT	CIRPVY....	.....C	NS.....	TLLHY
Tenmotreha	LQVSAQSQPS	CDSKVY....	.....C	QG.....	KLLHV
Rabbitreha	LGSEQALPPP	CESQIY....	.....C	HG.....	ELLHQ
Potatotreha	AETCKSIDKG	FVIPTT....	.....P	LV.....	IFLEK
Yeasttreha	LLAAEDTDKN	YQITIEDTGP	KVLKVGTRANS	YGYKHINIRG	TYMLSNLLQE
	101				150
Ecoli2treha	VQSAKIFP..	....DSKTFP	DCAPKMDPLD	ILIRYRKVRR	HRDF.....D
Ecolitreha	VQNAKLFP..	....DQKTF	DAVPNSDPLM	ILADYRMQQN	QSGF.....D
Bommotreha	VQMARLYP..	....DSKTF	DFQMRKDENA	TLQSAFQELLD	RTNHNPTKED
Tenmotreha	VEMSRIFN..	....DSKTFV	ELKMINDEQT	TLENFDNFLR	DTNHKRTRAD
Rabbitreha	VQMARLYP..	....DDKQFV	DMPLSTAPDQ	VLQSFALAA	TYNNTVPREQ
Potatotreha	VQEAALQTYG	HKGFDKLFV	DMSLRESLSE	TVEAFNKLPR	VVNGSISKSD
Yeasttreha	LTTAKSFGRH	QIFLDEARIN	ENPVNRLSRL	INTQF.....	WNSLTRRVD
	151				200
Ecoli2treha	LRKFVENHFW	L.....	.....P	EVYSSEYVSD	PQN.SLKEHI
Ecolitreha	LRHFVNVTFT	L.....	.....P	KE.GEKYVPP	EGQ.SLREHI
Bommotreha	LQEFVVDFFD	E.TSELEEWK	PDDHK..ENP	P.FLAKIRDQ	GFR.EFAKAL
Tenmotreha	LMKFVSDNFK	Q.ENEFESWT	PTDFT..DNP	T.LLSRIEDK	TIR.QFAQDL
Rabbitreha	LEKFVQEHFQ	AVGQELSWT	PGDWK..ESP	Q.FLQKISDP	KLR.AWAEQL
Potatotreha	LDGFIGSYLS	SPDKDLVYVE	PMDFV..AEP	EGFLPKVKNS	EVR.AWALEV
Yeasttreha	LNNVGEIAKD	TKIDTPGAKN	PRIYVPYDCP	EQYEFYVQAS	QMHPSLKLEV
	201				250
Ecoli2treha	DQLWPVLTRE	PQDHI....P	WSSLLALPQ.	.....	..SYIVPGGR
Ecolitreha	DGLWPVLTRE	TENTE....K	WDSLLPLPE.	.....	..PYVVPGR
Bommotreha	NDIWPTLARR	VKPSVLEKPE	QSSLVPMTH.	.....	..GFIVPGGR
Tenmotreha	VKIWPTLARK	VKKEVLDPY	HYSLLPVDN.	.....	..GFIIPGR
Rabbitreha	HLLWKKLGKK	IKPEVLSQPE	RFSLIYSQH.	.....	..PFIVPGGR
Potatotreha	HSLWKNLSRK	VADHVLEKPE	LYTLLPLKN.	.....	..PVIIPGR
Yeasttreha	EYLPKKITAE	YVKSVDNTPG	LLALAMEEHF	NPSTGEKTLI	GYPYAVPGGR
	251				300
Ecoli2treha	FSETYYWDSY	FTMLGLAESG	REDLLKCMAD	NFAWMIENYG	HIPNGNRTYY
Ecolitreha	FREYVYWDSY	FTMLGLAESG	HWKQVADMVA	NFAHEIDTYG	HIPNGNRSYY
Bommotreha	FKEIYYWDAY	WIEGLLITD	MTETAKGMIE	NLIELLYKFG	HIPNGSRWYY
Tenmotreha	FTEFYWDSY	WIVEGLLLSD	MHETVRGMLD	NFLSIVEKYG	FIPNGARVY
Rabbitreha	FVEFYWDSY	WVMEGLLLSE	MAETVKGMLQ	NFLDLVTAYG	HIPNGGRVYY
Potatotreha	FKEVYWDSY	WVIRGLLASK	MYETAKGIVT	NLVSLIDQFG	YVLNGARAYY
Yeasttreha	FNELYGWDSY	MMALGLLEAN	KTDVARGMVE	HFIIEINHYG	KILNANRSYY

FIG. 4A

Fig. 4-1



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	301			350
Ecoli2treh	LSRSQPPVFA	LMVELFEEDG	VR.....GA	..RRYLDHLK MEYAFWMDGA
Ecolitreha	LSRSQPPFFA	LMVELLAQHE	GD.....AA	.LKQYLPQM KEYAYWMDGV
Bonmotreha	QERSQPPLLA	AMIKLYYEKT	KD.....IE	FIRKYISALE KELEYWLDT.
Tenmotreha	LNRSQPPLLT	LMVSLYVSAT	ND.....ME	WLAKNIRTID TELRFWLNN.
Rabbitreha	LQRSQPPLLT	LMDRYVAHT	GD.....LA	FLRENIETLA LELDFWAEN.
Potatotreha	SNRSQPPVLA	TMIVDIFNQT	GD.....LN	LVRRLPAL LKENHFWNSGI
Yeasttreha	LCRSQPPFLT	EMALVVFCKL	GGRSNPDAVD	LLKRAFQASI KEYKTVWTAS
	351			400
Ecoli2treh	ESLIPNQAYR	HVVRMPDGSL	LNRYWDDRDY	PRDESWLEDV ETAK.HSG.R
Ecolitreha	ENLQAGQOEK	RVVKLQDGT	LNRYWDDRDY	PRPESWVEDI ATAKSNPN.R
Bonmotreha	.HLIA.....	.FNKDDRVYT	LLRYYIPSA	PRPESYEDY ELAQKLDKNT
Tenmotreha	.RLVD.....	.VVKDGIVYK	LAQYNSNSGS	PRPESYEDV TTASVLSDER
Rabbitreha	.RTIS.....	.VSSGGSNHT	LNRYHVPYGG	PRPESYSKDT ELAHTLPEG.
Potatotreha	HKVTI.....	.QDAQGSNHS	LSRYYAMWNK	PRPESSTIDS ETASVLPNIC
Yeasttreha	PRL.....	.....DPETG	LSRYHPNGLG	IPPETESDHF DTV.LLPYAS
	401			450
Ecoli2treh	PPNEVYRDLR	AGAASGW...	.DYSSRWL..	...RDTGRLA SIRTQFIP.
Ecolitreha	PATEIYRDLR	SAAASGW...	.DFSSRWM..	...DNPQQLN TLRTTSIVP.
Bonmotreha	DPNDIYADLK	SAAESGW...	.DFSTRWFIS	ESGDNSGNLT NLNTKNVIP.
Tenmotreha	DKAELYMDLK	SAAESGW...	.DFSSRWIVD	EYGGTRGNLS ALHTTRIIP.
Rabbitreha	SWETLWAEK	AGAESGW...	.DFSSRWLVG	..SPNPDSL SIRTSLKVP.
Potatotreha	EKRELYRELA	SAAESGW...	.DFSSRWM..	...SNGSDLT TTSTTSILP.
Yeasttreha	KHGVTLDEFK	QLYNDGKIKE	PKLDEFFLHD	RGVRESGHD TYRFEVCAY
	451			500
Ecoli2treh	...IDLNAFL	FKLESAIANI	SALKGEKE..	.....TE ALFRQKASAR
Ecolitreha	...VDLNSLM	FKMEKILARA	SKAAGDNA..	.....MA NQYETLANAR
Bonmotreha	...VDLNAIF	AGALQITANF	QAILKNPR..	.....RA AHWGYMAEQW
Tenmotreha	...VDLNAFL	CQAFQKLSEF	YQTLGDYP..	.....NA TFWSKLVKIW
Rabbitreha	...VDLNAFL	CQAEELLSGF	YSRLGNES..	.....QA TKYRNLRQOR
Potatotreha	...VDLNAFL	LKMELDIAFL	ANLVGESS..	.....TA SHFTEAAQNR
Yeasttreha	LATIDLNSLL	YKYEIDIADF	IKEFCDDKYE	DPLDHSITTS AMWKEMAKIR
	501			550
Ecoli2treh	RDAVNRYLWD	DENGIYRDYD	WRREQL....	.....A LFSAAAIIVPL
Ecolitreha	QKGIEKYLWN	DQOGWYADYD	LKSHKV....	.....RN QLTAALFPL
Bonmotreha	RSSIEQALWD	EEDGVWHYD	ILNNK....	.....PRR YFYTSNLAPL
Tenmotreha	QHSIEMVHYN	RDDGIWYDWD	NELSQ....	.....HRR MFFPSNFAPL
Rabbitreha	IAALTALLWD	EDKGAWFDYD	LENQK....	.....KNH EFYPSNLTP
Potatotreha	QKAINCIFWN	AEMGQWLWYD	LTNSDTSEDI	YKWEDLHONK KSFASNFVPL
Yeasttreha	QEKITKYMWD	DESGFFFDYN	TKIKH....	.....RTS YESATTFWAL
	551			600
Ecoli2treh	YVGMANHEQA	DRLANAVRSR	LLT.....P	GG...ILASE YETGEQWDKP
Ecolitreha	YVNAAAKDRA	NKMATATKTH	LLQ.....P	GG...LNTTS VKSGQQWDAP
Bonmotreha	WMNAVEKPFL	AKHGARVLEY	LHESQALEYP	GG...VPVSL VNSGEQWDFP
Tenmotreha	WSETFDSRNA	EILGEMAAEY	FITQNMMDYH	GG...IPTSL SHTGEQWDYP
Rabbitreha	WAGCFSDPAI	A...DKALQY	LQDSQILNHR	HG...IPTSL QNTGQQWDFP
Potatotreha	WTE.ISCSN	NITTQKVVQS	LMSSGLLQ.P	AG...IAMTL SNTGQQWDFP
Yeasttreha	WAGLATKEQA	QKMVEKALPK	LEMLGGLAAC	TERSRGPISI SRPIRQWDYP

FIG. 4B

Fig. 4-2

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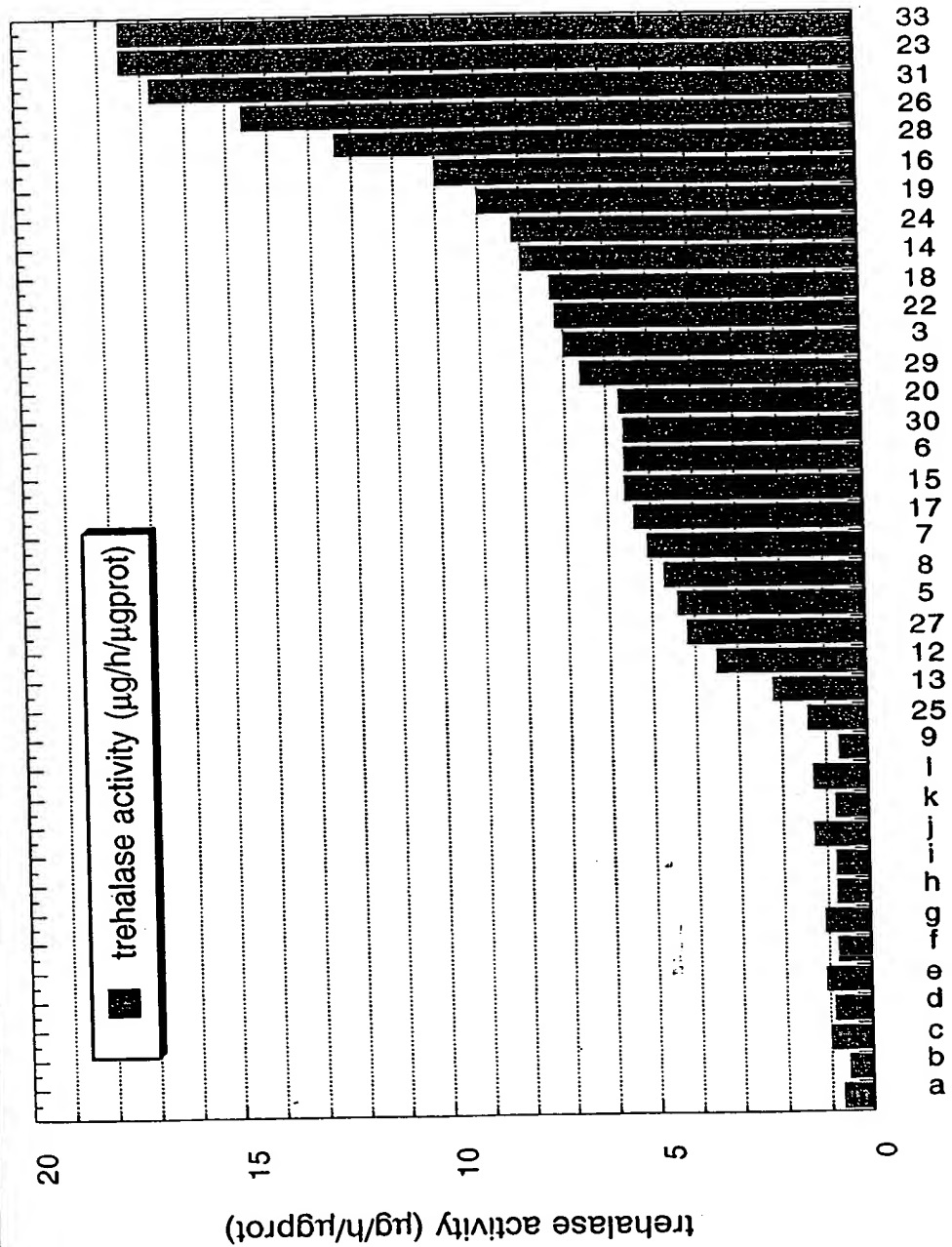
	601			650
Ecoli2treh	NGWAPLQWMA	IQGFKMYG...	.DDLKGDEIA	RSWLKTVNQF YLE.QHKLIE
Ecolitreha	NGWAPLQWVA	TEGLQNYG...	.QKEVAMDIS	WHFLTNVQHT YDR.EKKLVE
Bommotreha	NAWPPEVSIV	VTAIQNIQSE	ESSKLAKELA	QVWVRACKSG FTE.KKQMF
Tenmotreha	NAWPPMQSII	VMGLDKSGSY	RAKQLARELA	RRWVKANLIG FRQ.TGEMFE
Rabbitreha	NAWAPLQDLV	IRGLAKSPSA	RTQEVAFQLA	QNWIRTNFDV YSQ.RSAMY
Potatotreha	NGWPPLQHII	IEGLLRSGLE	EARTLAKDIA	IRWLRTNYVT YKK.TGAMY
Yeasttreha	FGWAPHQILA	WEGLRSYGYL	...TVTNRLA	YRWLFMMTKA FVDYNGIVVE
	651			700
Ecoli2treh	KYHIADGVPR	EGGGGEYPLQ	.....D	GFGWTNG... VVRRLLIGLYG
Ecolitreha	KYDVSTTGT.	GGGGGEYPLQ	.....D	GFGWTNG... VTLKMLDLIC
Bommotreha	KYDALNAGKY	.GGGGEYTVQ	.....D	GFGWSNG... VVLEFLDRYG
Tenmotreha	KYNVEVPGQN	.GGGGEYVVQ	.....S	GFGWTNG... VVLEFINQFF
Rabbitreha	KYDISNA.QP	.GGGGEYEYVQ	.....E	GFGWTNG... VALMLLDRYG
Potatotreha	KYDVTKCGAY	.GGGGEYMSQ	.....T	GFGWSNG... VVLALLEEFG
Yeasttreha	KYDVTRGTDP	HRVEAEYGNQ	GADFKGAATE	GFGWVNARYI LGLKYMNSYE
	701		732	
Ecoli2treh	EP.....	.....	.....	..
Ecolitreha	PKEQPCDNVP	ATRPTVKSAT	TOPSTKEAQP	TP
Bommotreha	AVLTSVDSVD	ASANNGQSNE	ESETDSKEK.	..
Tenmotreha	TT.....	.....	.....	..
Rabbitreha	DRLSSGTQLA	LLEPHCLAAA	LLLSFLTR..	..
Potatotreha	WPEDLKIDC.	.....	.....	..
Yeasttreha	RREIGACIPP	ISFFSSLRPQ	ERNLYGL...	..

FIG. 4C

~~Fig. 4-3~~



Trehalase activity in tobacco leaves transgenic for a potato trehalase cDNA



leaf sample

FIG. 5

Fig 5
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~~8/6~~ 8/8

Trehalose accumulation in microtubers

trehalose <i>mg.g⁻¹ fresh weight</i>					
pMOG1027 (845-11)		pMOG1027 (845-22)		pMOG1027 (845-28)	
9a	0.08	7a	0.02	3a	0.04
9b	0.21	7b	0.01	3b	0.15
11a	0.01	9a	0.02	15a	0.4
11b	0	9b	0.02	15b	ND
...		12a	0.09	18a	0
...		12b	0	18b	0.2
...		15a	0	26a	0.12
...		15b	0.01	26b	0.22
...		32a	0.01	27a	0.02
...		32b	0	27b	0.01
...		34a	0.01	31a	0.2
...		34b	0.01	31b	0.1
...		36a	0.01	34a	0.48
...		36b	0	34b	0.75
				38a	0.08
				38b	0.12
N= 25		N= 30		N= 29	

FIG. 6

~~Fig. 6~~